

Proceeding: INQUIRY CONCERNING THE DEPLOYMENT OF ADVANCED TELECOMMUNICATIONS  
CAPABILITY TO ALL AMERICANS IN A REASONABLE AND TIMELY FASHI  
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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Inquiry Concerning the Deployment of	)	
Advanced Telecommunications	)	
Capability to All Americans in a	)	CC Docket No. 98-146
Reasonable and Timely Fashion, and )	)	
Possible Steps to Accelerate Such	)	
Deployment Pursuant to Section 706 of the	)	
Telecommunications Act of 1996	)	

**COMMENTS  
OF  
KIESLING CONSULTING LLC**

Kiesling Consulting LLC (Kiesling) respectfully submits the following comments in the above-captioned proceeding.

**Introduction**

There is demand in the marketplace for high bandwidth services and applications. This demand is evidenced by the race between competing technologies to bring products to the market. CATV companies are racing to upgrade their networks to deliver 2-way high-bandwidth cable modem service. Digital Subscriber Line (DSL) product vendors are racing to overcome interoperability and standards problems. Local Multipoint Distribution System (LMDS) vendors are racing to bring wireless broadband modems and other products to market. The fact that all of these competing technologies are maturing at the same time sends a clear signal that it is the market that is dictating technology development. These companies are not pushing technology

on the market. The demand is real and these companies are all trying to be the first to market a product to satisfy this demand.

Each technology is being embraced by different interests. Cable companies are looking at cable modems to bring telephony and data services to their subscribers. Incumbent LECs are looking at xDSL products to serve their residence and business subscribers. Competitive LECs are looking at both xDSL and LMDS. Potential providers of advanced telecommunications services, cable TV companies, incumbent local exchange carriers, competitive local exchange carriers, wireless carriers, and satellite companies, all operate under different levels of regulation. The Commission, as a result, must focus its efforts on keeping the regulatory playing field even for the companies that deploy these various technologies. Marketplace demand should dictate which technologies and companies are favored, not artificial regulatory incentives or barriers.

Section 706(b) of the Telecommunications Act of 1996 (Act) states "the Commission shall determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion."<sup>1</sup> Kiesling believes that there is overwhelming evidence to suggest that the potential providers of advanced services are deploying these services in a reasonable and timely fashion. The Commission therefore should focus its efforts on reducing uneven regulation of the potential providers of advanced services.

With the central theme of these comments being that advance telecommunications services are being deployed in a reasonable and timely fashion and that the Commission must

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<sup>1</sup> Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, *codified at* 47 U.S.C. §§ 151 *et seq.* Hereinafter, all citations to the 1996 Act will be to the 1996 Act as it is codified in the United States Code. The 1996 Act amended the Communications Act of 1934. We will refer to the Communications Act of 1934, as amended, as the "1996 Act" or as the "Act."

make the playing field level for all potential providers of advanced telecommunications services, we will address some of the other issues that the Commission is seeking comment on, such as the definition of advanced telecommunications services, LEC incentives to deploy xDSL, competition, and applications of advanced telecommunications services. We will then suggest some broad regulatory changes that need to be addressed by the Commission to make the regulatory environment fair for all potential providers of advanced telecommunications services.

### **Statutory Terms**

Section 706(c)(1) defines advanced telecommunications capability as "without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology." The Commissions interpretation of the term "switched" must include ATM and packet switching. The use of the term "switched" in the traditional circuit-switched context, runs contrary to the Act's stated goal of remaining technology neutral. Circuit-switching would imply that only a traditional carrier will provide advanced services. ISDN is a circuit-switched broadband service. In all likelihood, ISDN will be made obsolete by the introduction of non-switched technologies such as digital subscriber line (DSL) and cable modems. As the development of DSL and cable modems shows, advanced services do not need to be circuit-switched. These services are capable of providing internet access, video-on-demand, remote LAN access, and potentially many more services that haven't even been thought of yet.

### **LEC Incentives to Deploy Digital Subscriber Line Technology**

The slow deployment of ISDN cannot be assumed to be a harbinger of the xDSL rollout. The ISDN had many pitfalls: high service cost, expensive switch upgrades, complicated setup, and few internet service providers (ISPs) with ISDN capability. DSL, by contrast, is inexpensive,

does not require costly switch upgrades, is easy to provision, and is coming at a time when the market is more receptive to a high bandwidth product offering.

Use of DSL does not speed up the obsolescence of circuit switching equipment as claimed by Covad Communications Co. in footnote 16 of the Notice of Inquiry.<sup>2</sup> In fact, DSL will divert dial-up internet traffic off of the switched network, freeing up capacity in the switch and extending its useful life. The digital signal path is routed from the central office to internet service providers (ISPs) over traditional non-switched circuits. Services like xDSL provide opportunities for LECs to supplement their current product offerings while taking advantage of their existing infrastructure.

One of the factors that is contributing to the slow deployment of DSL is the lack of a commonly accepted standard for Asymmetric DSL. Currently there are two competing standards: T1.413 Issue 2 Discrete Multi-tone (DMT) modulation and Carrierless Amplitude/Phase (CAP) Modulation. Even with these two standards, the lack of interoperability between competing manufacturers of DSL equipment is also contributing to the slow deployment of DSL. A third "DSL lite" standard has also been advanced. This standard, backed by a large industry consortium, is less costly to provision and does not require a splitter. The tradeoff is less bandwidth availability. Spectral incompatibility is yet another problem that must be overcome. ADSL cannot share a binder group in a cable with an existing T1 circuit because of frequency interference between the two services.

Carriers also face a problem when loops contain load coils and bridged taps. Smaller carriers, especially RUS borrowers, typically have network design requirements that they must adhere to. These rules typically do not allow use of load coils and bridged taps. RUS guidelines

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<sup>2</sup> See CC Docket No. 98-146, Notice of Inquiry, FCC 98-187 (rel. August 7, 1998) ("NOI").

also recommend loop lengths of less than 15,000 to 18,000 feet. As a result, small, rural carriers are well-positioned to deploy DSL when the standards have been set and products become compatible. But until these problems have been resolved, carriers may shy away from investing in technologies that may not be compatible with a future DSL standard. This situation is very similar to buying a Sony Betamax video cassette recorder and then finding out later that the VHS standard is dominating the market. Many carriers are waiting for the standards issues to be resolved before leaping into the market.

### **Competition**

At paragraph 31, the Notice of Inquiry (NOI) solicits comments regarding the extent to which competitive LECs are deploying advanced services. Competitive LECs are deploying advanced services. Carriers such as Covad, Dakota Services, Ltd, NorthPoint, Network Access Solutions, and Concentric are all currently deploying DSL services. For the most part, these companies are targeting large metropolitan areas and business customers. They are not serving the mass market. Instead, they are positioning their products as T1 and ISDN substitutes for small businesses.

At paragraph 56, the Commission asks how it can create incentives for competitive entry. There is no need to create incentives for competition for advanced telecommunications services. Telecommunications is no longer a natural monopoly. With wireless and wireline networks there are multiple paths into customer homes. Cable companies and incumbent LECs already have facilities running into the vast majority of homes in the United States. There is enough wireless spectrum available for many providers to enter the market. Again, it is important for the Commission to level the playing field so that all of these potential providers of advanced services can compete fairly.

Competition is likely to develop in different areas at different times. As with the rollout of cable, cellular, and PCS, we should expect deployment of advanced services to begin in dense metropolitan areas and then spread to outlying areas. There will also be plenty of room for entrepreneurial companies to find niche markets that are not being filled by incumbent carriers or large cable TV companies. Once one provider begins to serve a market, we should expect an immediate response from rivals not wishing to give away market share without a fight.

### **Applications**

For now, simply providing high-bandwidth access to customers will be sufficient to satisfy demand for ever faster access to the internet and other common applications. However, once the high-bandwidth access is available, new applications will be developed that will take advantage of the new technology. This situation is analogous to each new generation of faster processor chips for personal computers. When PCs with these new, faster processors were released, software vendors and application developers generally followed suit with new releases of software and new applications that were designed to take advantage of the new processor's speed. It may well be the case that the "killer application" for high-bandwidth access has not even been thought of yet.

### **Current Deployment**

The Commission should not set goals or time frames for deployment of advanced services. Industry publications, such as Telephony magazine, list new deployments of services almost weekly. This is ample evidence that advanced technologies are being deployed in a reasonable and timely fashion. Valley Telephone Cooperative in south Texas has deployed DSL. This is a company with a line density of less than one subscriber per square mile of serving area. Several of our mostly small, rural carrier clients have begun to deploy DSL on a trail basis.

The following table lists cities where the Regional Bell Operating Companies (RBOCs) have ADSL service or soon will. These data are from the RBOCs's web sites.<sup>3</sup>

<b>Ameritech</b>	<b>Bell Atlantic</b>	<b>Bellsouth</b>	<b>US West</b>	
Ann Arbor	Washington DC	Atlanta	Phoenix	Santa Fe
	Pittsburgh	Birmingham	Tuscon	Whiterock
	Philadelphia	Charlotte	Boulder	Fargo
	North Bergen	Fort Lauderdale	Colorado Springs	Eugene
	Cliffside Park	South Florida	Denver	Portland-area
	Elizabeth	Jacksonville	Fort Collins	Salem
	Englewood	New Orleans	Greely	Sioux Falls
	Hackensack	Raleigh	Boise	Davis County
	Hoboken		Ames	Holladay
	Jersey City		Ceder Rapids	Kearns
	Leonia		Council Bluffs	Murray
	Oradell		Des Moines	Orem
	Rutherford		Minneapolis	Provo
	Union City		St. Paul	Salt Lake City

<sup>3</sup>

Ameritech: [www.ameritech.com/products/data/adsl/index.html](http://www.ameritech.com/products/data/adsl/index.html)

Bell Atlantic: [www.bell-atl.com/adsl/more\\_info/pricing.html](http://www.bell-atl.com/adsl/more_info/pricing.html)

Bellsouth: [www.bellsouth.net/external/adsl/city\\_availability.html](http://www.bellsouth.net/external/adsl/city_availability.html)

US West: [www.uswest.com/com/insideusw/news/012998.html](http://www.uswest.com/com/insideusw/news/012998.html)



	Union City		Rochester	Olympia
	Newark (parts of)		Helena	Seattle-area
			Omaha	Tacoma
			Albuquerque	Cheyenne
			Las Cruces	

At the xDSL ComForum held in Chicago June 21-22, representatives from Ameritech and GTE (before the merger announcement) hinted that their companies would soon be announcing a widespread deployment of DSL. The Ameritech representative stated that they would start deploying ADSL in January, 1999. The GTE representative stated that their company needs to make sure they have the facilities to serve anyone that requests service. GTE's image could be hurt if demand exceeded their ability to provision service.

Incumbent LECs are not deploying advanced services in a vacuum. CLECs are providing DSL service in many parts of the country and are focusing on the business market for the most part. Cable modem service is also available in many parts of the country, although much of the cable infrastructure still needs to be upgraded to offer 2-way service. LMDS may still be a year or more away from any sizeable deployment. Since the LMDS spectrum was only recently made available, many vendors are still rushing to develop products and applications. Direct Broadcast Satellite data service is currently available anywhere in the continental United States where a subscriber has access to an internet service provider (ISP) for the upstream data path. Soon the Iridium satellite system will be on-line. This system will provide a potential link to any subscriber, anywhere in the world.

### **Regulatory Changes**

The current regulatory regime places uneven regulatory requirements and constraints on providers of advanced telecommunications services. Incumbent LECs, competitive LECs, CATV companies, Direct Broadcast Satellite companies, wireless carriers, and satellite telephony companies all operate under different levels of regulatory oversight. Many of the regulatory requirements and constraints are imposed at the state level and vary from state to state, but there are several areas that the Commission can address. Rules need to be changed so that these providers can compete fairly. The lines of distinction between these businesses are disappearing, and the Commission's rules need to recognize this fact.

Jurisdictional separations must be reformed in the face of a data-centric network. Packet switching does not lend itself to intra-state and inter-state distinctions. Will telephone companies that use their existing facilities to provide video services allocate a greater portion of their networks to the intra-state jurisdiction? The impact of Section 254 Universal Service needs to be addressed. Should these companies contribute to the universal service fund on the basis of revenues from video and entertainment services? How will a benchmark level of revenue be determined if video and other entertainment services are provided over LEC facilities? Will telephone companies that provide data service allocate a greater portion of their network to the interstate jurisdiction? Will CATV companies that provide telephony be subject to the separations process? Will CLECs?

Section 251(c) unbundling requirements may deter many carriers from deploying advanced telecommunications services. Carriers may be unwilling to risk large amount of capital on advanced services if they are forced to turn the elements needed to provide the service over to a competitor at cost. Unbundling requirements would need to be imposed on all providers to keep the playing field level.

## **Conclusion**

Advanced telecommunications services are being deployed in a reasonable and timely fashion. This is evidenced by the race by many technology vendors to deliver a product to the market. There are many competing interests looking at offering advanced services: ILECs, CLECs, CATV companies and, wireless carriers—both terrestrial and satellite. All of these providers are currently deploying advanced services. Lists of the cities where service is available can be found on the internet. Industry publications list new deployments of services on a frequent basis.

The Commission should find that advanced telecommunications services are being deployed in a reasonable and timely fashion. The Commission should then focus its efforts on making the playing field level for all potential providers of advanced telecommunications services. The impact of advanced telecommunications services on many outdated regulatory rules needs to be addressed. Separations, universal service mechanisms, and unbundling requirements specifically need to be addressed.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Michael Theis", followed by a vertical line.

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